National Institute of Environmental Health Sciences

Changing climate-changing pathogens: Toxoplasma gondii in North-Western Europe

Author(s): Meerburg BG, Kijlstra A
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Abstract:

In this review, we describe the effects of global climate change for one specific pathogen: the parasite Toxoplasma gondii. It is postulated that an increase of T. gondii prevalence in humans can occur in some regions of North-Western Europe as a result of changing environmental conditions. Such a change can be predicted by using Global Climate Change models. We have elaborated such a prediction for one scenario (SRES A1) by using one specific model (CCSR/NRIES) as an example. Next to environmental factors, also anthropogenic factors may contribute to increased prevalence of T. gondii in this region. In order to counter the potential severe consequences of a potential increase resulting from the combination of climatic and anthropogenic factors, there is an urgent need for the development of a human vaccine. Until a vaccine that offers complete protection is developed, the emphasis should be on treatment optimization and prevention.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2695550

Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

Special Report on Emissions Scenarios (SRES) Scenario: SRES A1

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Quality

Food/Water Quality: Pathogen

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Region

Other European Region: Northwestern Europe

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease (other): Toxoplasma gondii

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Outcome Change Prediction

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content